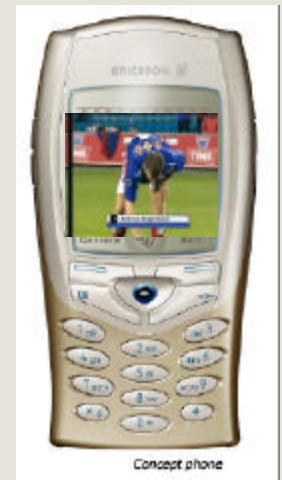


Experiences on the Road to 3G - What, When, Why

- **Spectrum Needs Exist in Near - Medium - Long Term**
 - Increasing number of users, intensified use, new applications/services, new categories of users (device-to-device)
 - Harmonization benefits users, operators, suppliers, economy
 - In spite of increasingly efficient technologies
 - Varies by carrier in present to near term
- **The Path Toward “3G” is Being Built**
 - 2½ G networks and applications are rolling out world-wide
 - Applications are being developed for businesses and consumers
 - User uptake moving from 2 - 2¼ - 2½G on to 3G capabilities
- **US Spectrum for “3G” - Ericsson Supports the FCC/NTIA Plan of 1710 / 2110**
 - Spectrum availability is key - not allocation/auction date
 - Proposals and options explored in FNPRM create a way forward

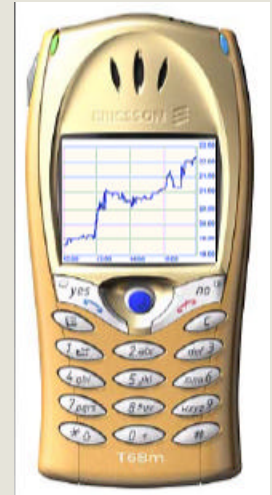
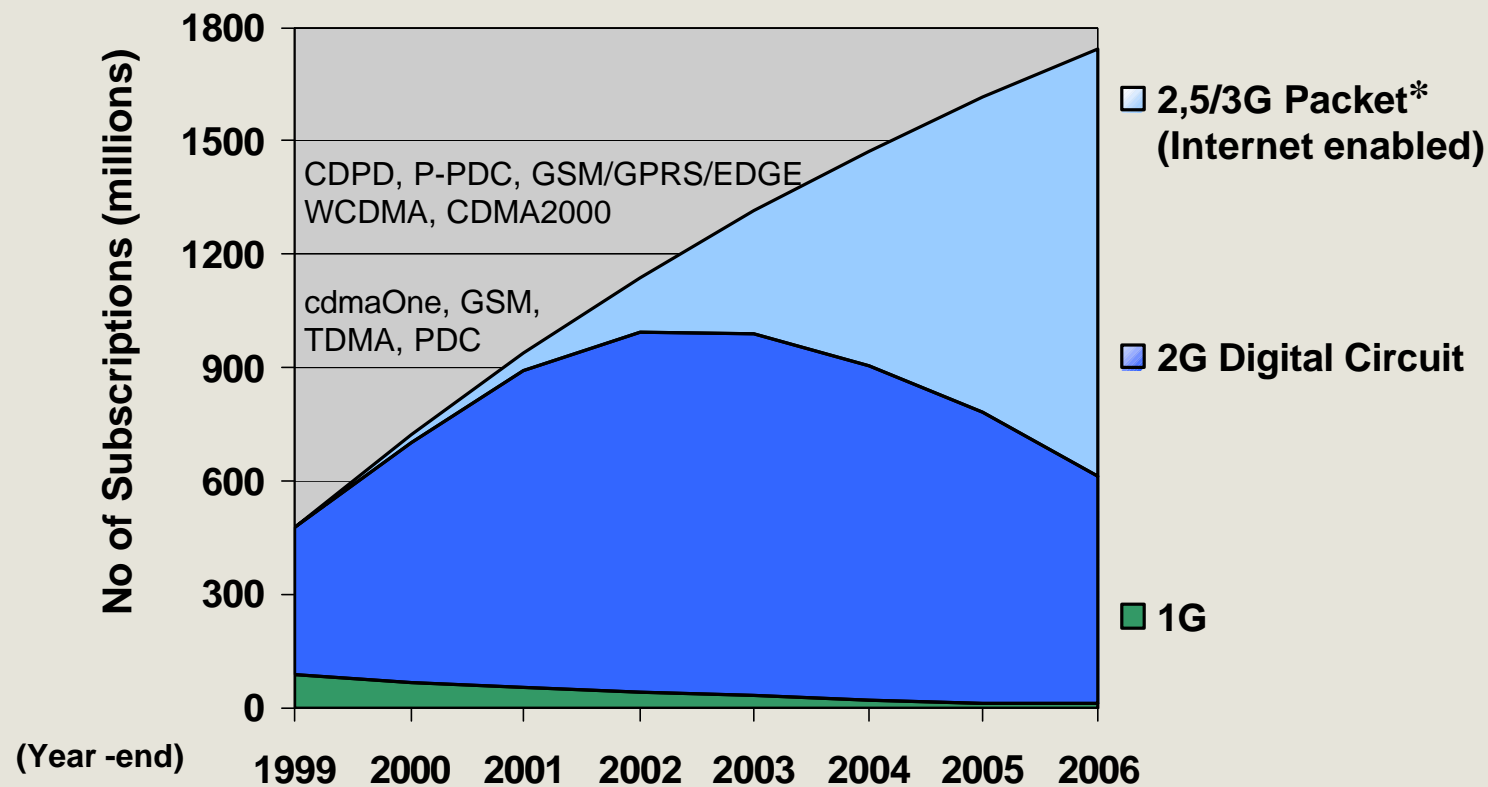


Uptake, Usage, Applications Build Spectrum Need

- **Spectrum is needed near - medium - long term**
 - 1,100,000 new mobile phones - Daily worldwide!
 - 700,000 new subscribers - Daily worldwide!
 - US: one every 1.5 seconds
 - US Minutes of Use now approaching 400 / month
 - 120,000 new “mobile internet” users - Daily worldwide!
 - 10-15% uptake of mobile portals in major EU markets
 - 10-15% of major EU operator revenue from data; US minimal
 - 34% of large European companies have mobile data applications:
 - supply chain improvements; goodstracking; field service; maintenance; sales support; management “mobile companion”

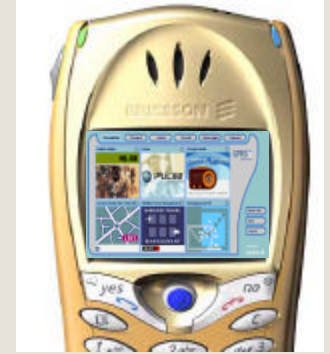


3G Market Forecasts



** Mobile Internet- Enabled users (packet/circuit) An enabled user has a phone & an operator capable of delivering packet data services.*

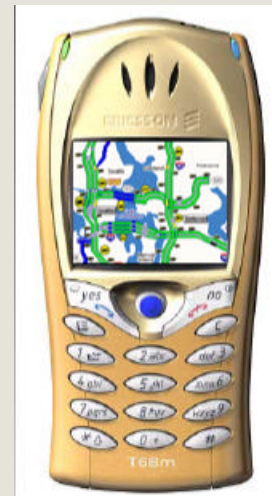
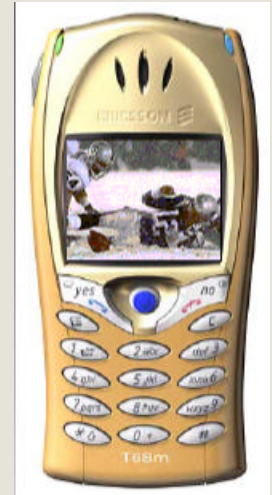
The Path toward “3G” is being built - Good Applications/Services are Key



- **“Mobile Internet/Mobile Data” is NOT web browsing but:**
 - Messaging including imaging
 - Personalization, location - enabled services, transactions
- **Japanese - European mobile data use shows great similarities**
 - top iMode application is text messaging - comparable to SMS
 - top iMode content is ring tones and picture downloads - in Europe provided by SMS
 - iMode is spelled SMS in European (Short Message Service)

3G roll-out and up-take

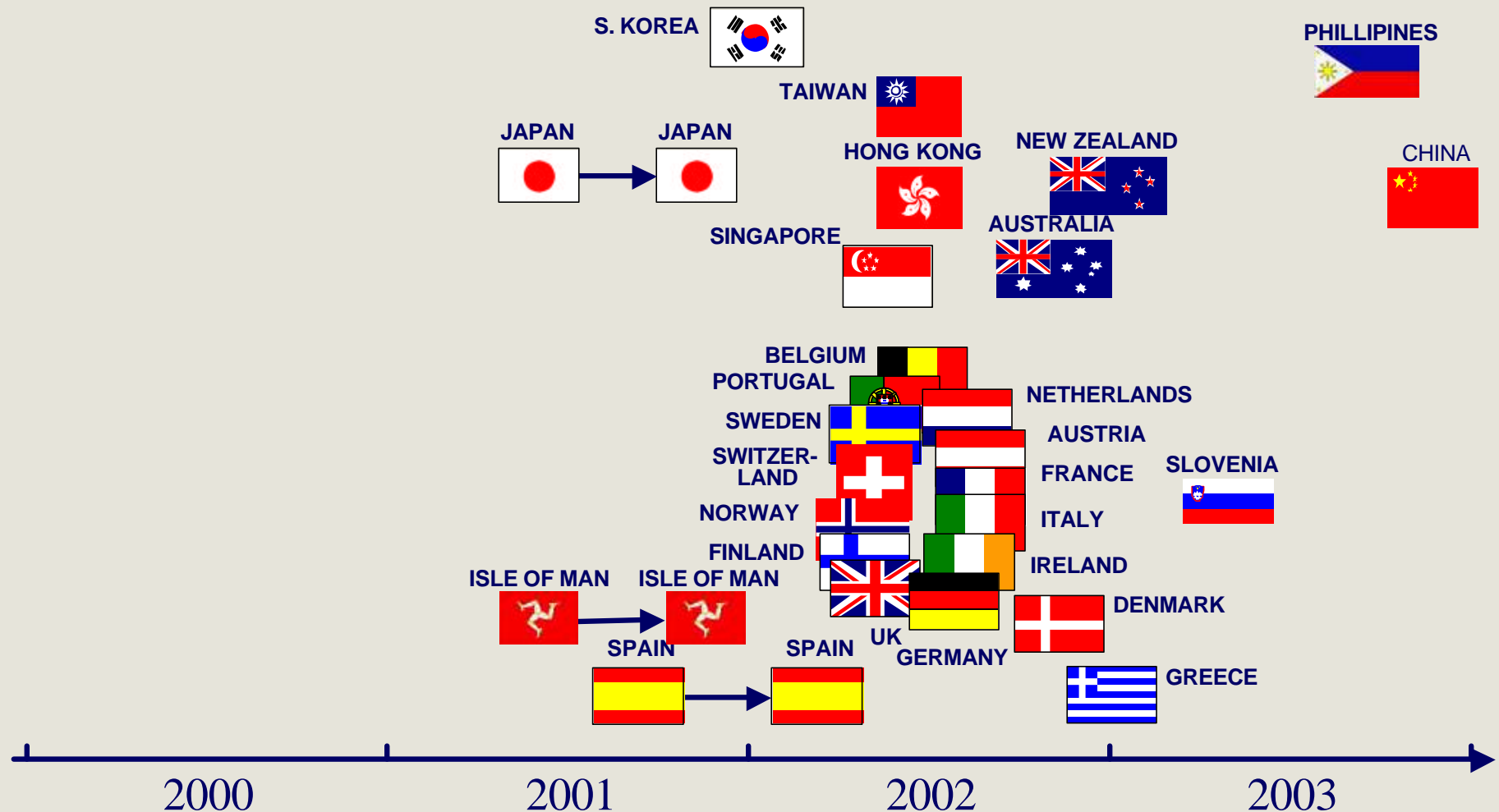
- **30 billion SMS per month - MMS will launch worldwide mid - 2002**
- **76 of 162 contracted GPRS 2½G networks already in operation**
- **GPRS handsets now available in volume**
 - 5 - 10 million shipped in 2001; 50 - 70 million forecasted for 2002
 - 50 models from 23 vendors
- **Enterprise sector sees increasing adoption of mobile data applications**
- **Mobile portals (personalization) attracting 10-15% of subscribers**
- **Data revenues for European carriers 10-15% - minimal for US carriers**
- **3G networks shipped to about 50 carriers**
- **3G technical launches in some markets - commercial launches 2H 2002**



MMS = Multimedia Message Service GPRS = General Packed Radio Service on GSM

Data is for all vendors

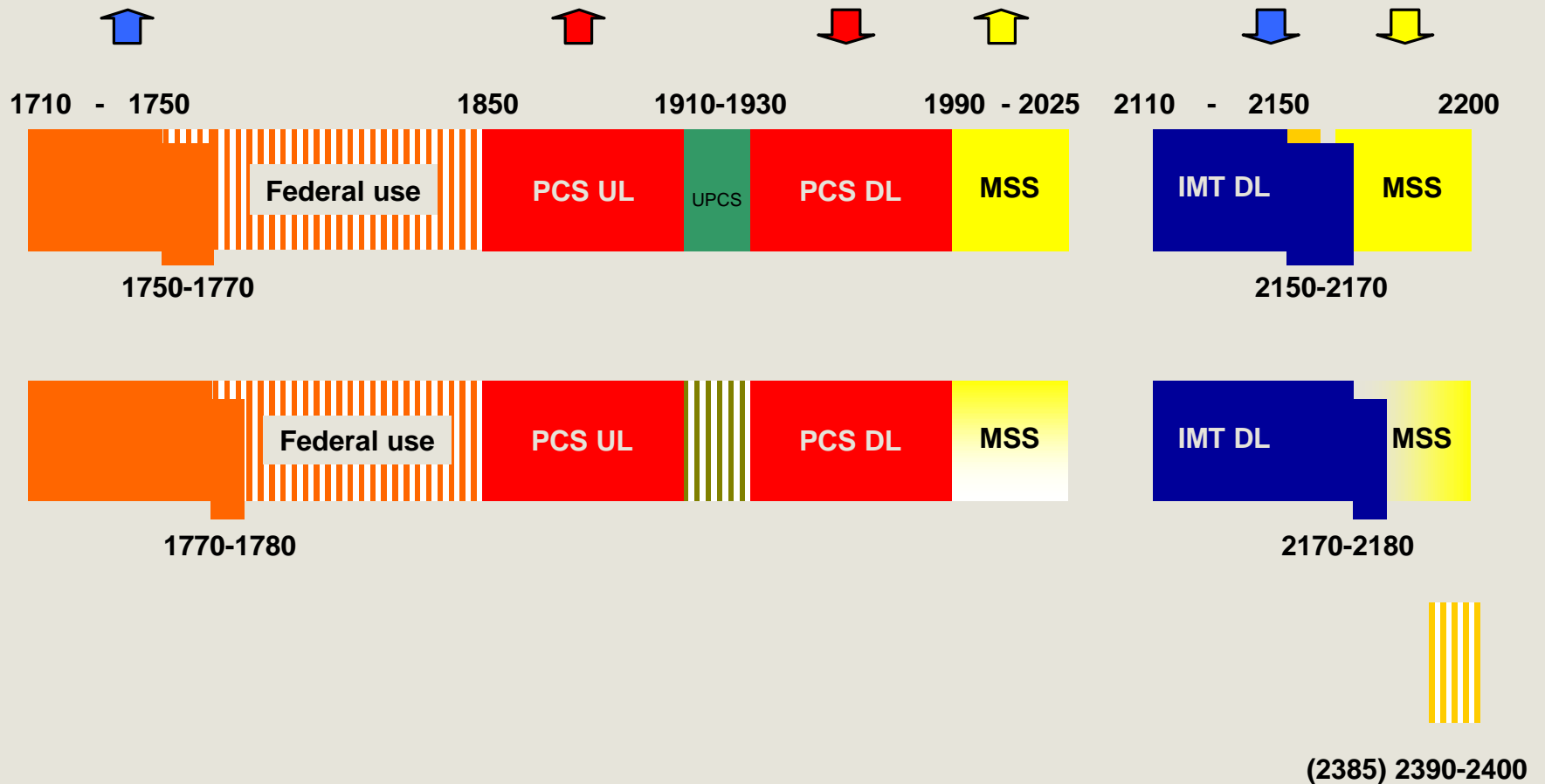
3G Deployment Outside the U.S.



FNPRM - US Path to Advanced Wireless Services

- **Key FNPRM proposals for sufficient amount of 3G spectrum in near/mid term:**
 - Reallocation/relocation of 2150-2160 MHz
 - Reallocation of 2165-2170 MHz
 - Reallocation/relocation of 1755-1770 MHz
 - Full clearing of 1710 - 1755 MHz
- **Other proposals that support clearing of 1710-1770 / 2110-2170 MHz:**
 - 2385-2400 MHz as relocation spectrum (MDS/Federal)
 - 1910-1930 MHz as relocation spectrum (MDS/Federal)
 - Contiguous assignment of MSS channels in upper part of MSS bands
- **Other options:**
 - New PCS channels at 1910-1915 / 1990-1995 MHz
 - Additional 3G spectrum at 1770-1780 / 2170-2180 MHz
 - Reallocation of MSS spectrum if license milestones are missed

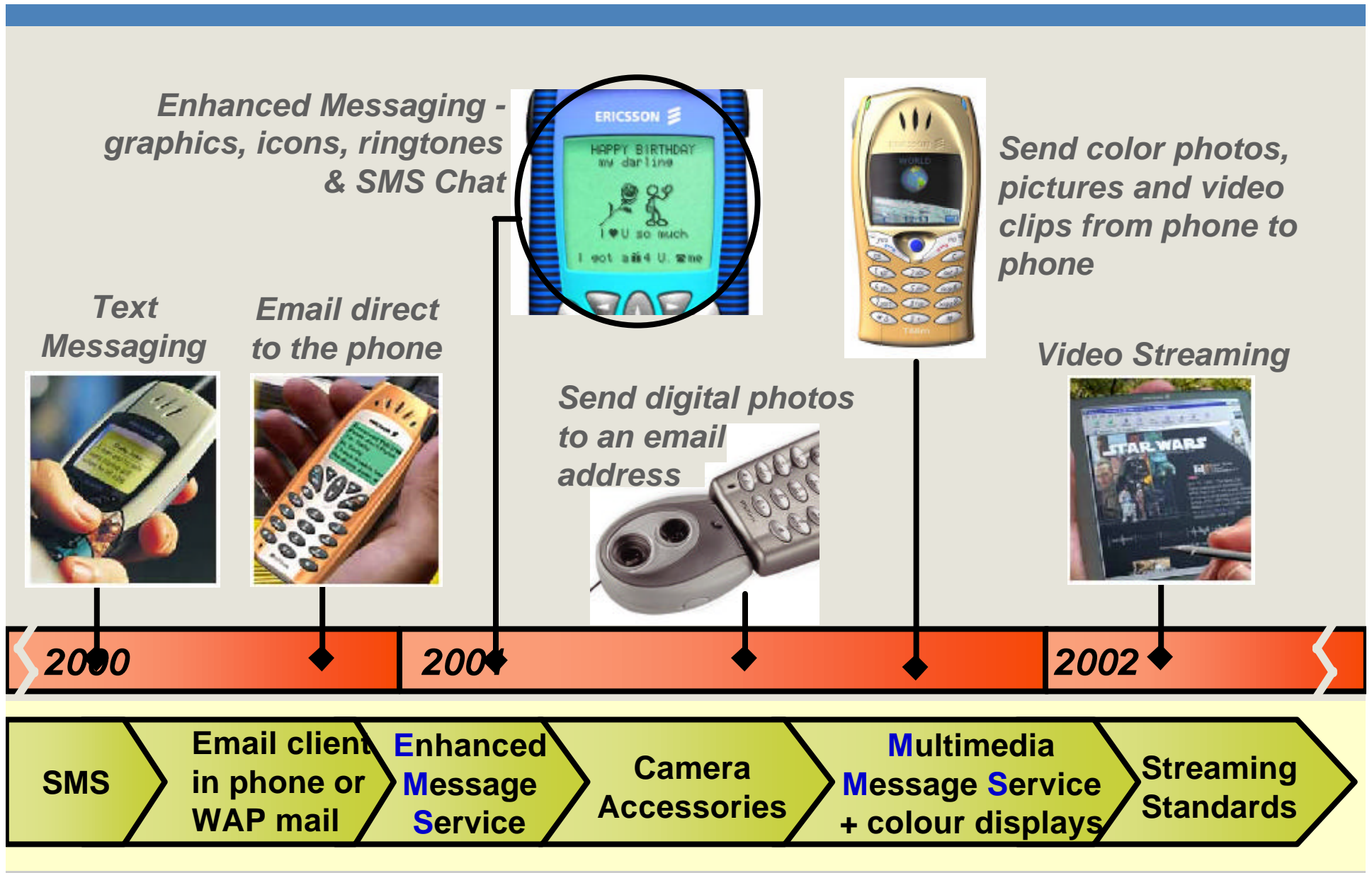
Possible Advanced Mobile Spectrum Solution



"It's not a simple question of being ahead. Like a marathon runner, being two or three steps behind until the very end can be very good." M. Powell, 3/2001

- US needs to stay in the race - the FCC/NTIA plan is right path - stick with it
- 3G is developing and will need the spectrum the FCC plans to allocate
- European experience of early mobile data applications and services demonstrates their usefulness and desirability and will lead to 3G services

Messaging Applications



MMS - Make mobile internet happen now!

- World's first global agreement - Vodafone
 - 9 countries initially
 - Commercial service mid-2002
- > 50 trials globally
- MMS solution built on the 3GPP standard.

“MMS is an integral part of Vodafone’s messaging strategy. We believe the greater functionality of MMS will be the starting point of a broader customer experience which will pave the way for 3G usage.”

Thomas Geitner

Chief Executive, Global Product and Services, Vodafone

Global Cellular Subscriptions by Region

